

Abstract

A clamshell fabrication process wherein an ultrafiltration (UF) vessel (or a strip or array of filter vessels) is formed using half cells joined along a central plane to form each vessel. A filter membrane covers a port of the cell, and an outer body is overmolded to form the completed vessel. Two filter membranes are crushed together skin to skin. When applied to strips of half cells, a multi-well strip or array is formed, with sample-holding reservoirs formed by the space created between two strips of half-cells for each row of filter cells. The membrane thus covers the entire wetted interior of each cell, and may extend from near the opening at the top of an open cell to a conical bottom of the cell. A number of strip assemblies can be formed together to create larger arrays of filter cells. The overmolding process creates a crush seal with edges of the filter membrane. The vessel may have a regenerated surface, or be surface treated to be non-retentive, further enhancing yield when used to process sticky or adherent materials, such as proteins and biomolecules. This provides quantitative yields of filtrate, and retentate.

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